

# The association of free fluid in the abdomen after cesarean delivery and postpartum pain

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## Introduction

- The FAST scan is used in the emergency medicine setting to guide decision making with respect to surgical vs medical management in a patient who is hemodynamically stable but has suffered blunt abdominal or thoracic trauma
- Cesarean deliveries yield high volume blood loss, and significant blood and fluid can be left behind in the abdomen, becoming a source of postoperative peritoneal irritation and pain
- There are currently no studies that evaluate intraabdominal free fluid after cesarean delivery and its correlation with postpartum opioid use or pain scores

## Study Design

- Prospective observational study of women who underwent cesarean delivery for any indication over a period of 8 weeks at a single academic institution
- Sonographer was trained and validated using observed scans
- Patients were recruited and consented, and underwent two postoperative scans; one within 2 hours postop, and another within 36 to 48 hours postop
- Data were collected including cleaning of the paracolic gutters, postop pain scores (1-10), and total dose of oxycodone in milligrams administered within the first 48 hours postop
- Primary outcome was the correlation of free fluid with postpartum opioid use
- Secondary outcomes were correlation of free fluid with postpartum pain scores, and cleaning of the paracolic gutters and relationship to presence of intraabdominal free fluid postoperatively

## Results

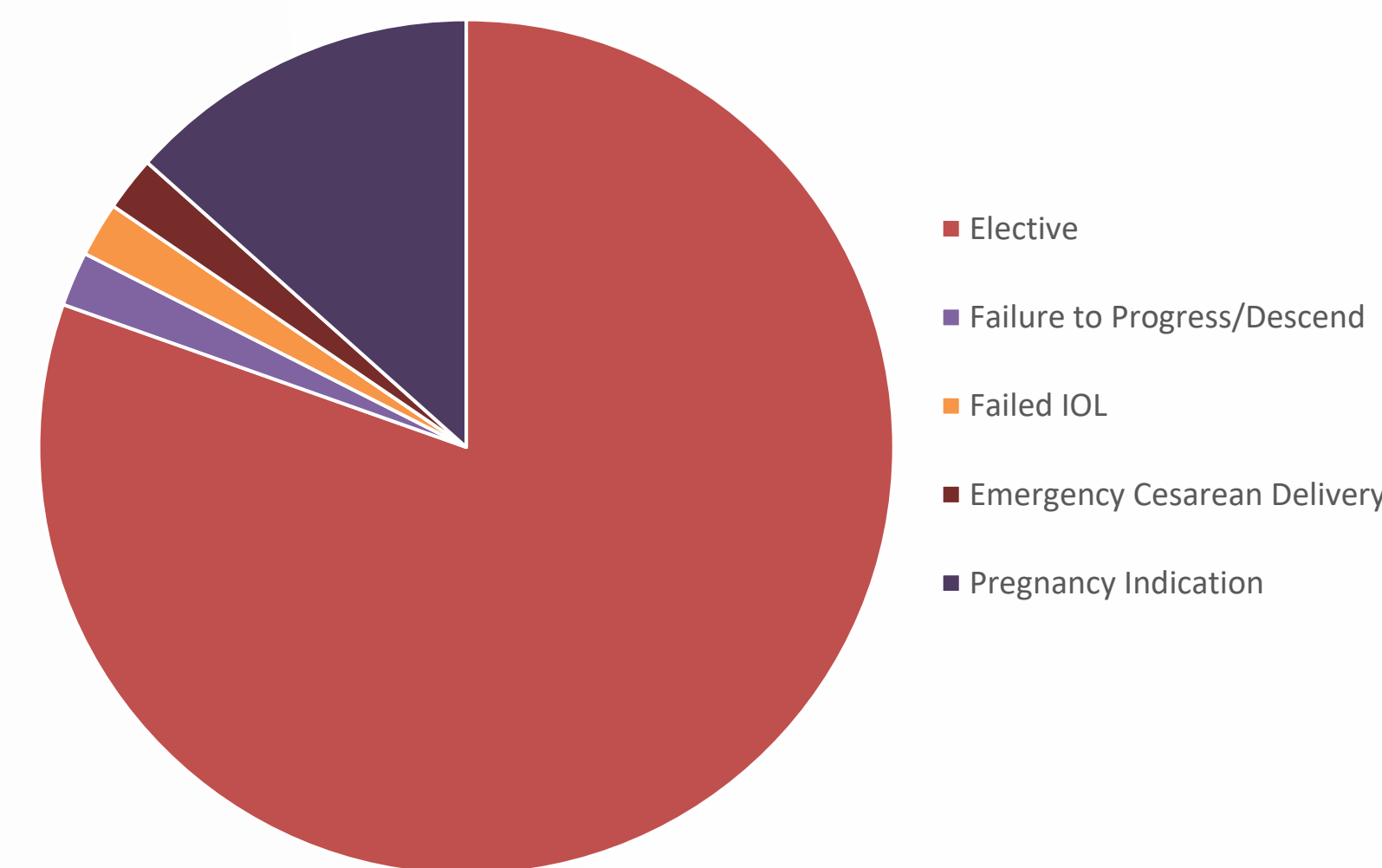
- N= 38; 78% elective cesarean, 13% for pregnancy indication such as placenta previa or fetal malpresentation, and 2% each for failure to descend/progress, failed induction of labor, and emergency cesarean delivery or terminal bradycardia, abruption, category III tracing
- Operative characteristics: paracolic gutters were cleaned intraop in 63% of patients; mean QBL was 702cc, and uterotonics other than Pitocin were used in 8% of patients
- Dose of oxycodone was not significantly correlated with quantity of free fluid detected via FAST scan at any time point, whether stratified by total free fluid or free fluid detected in the hepatorenal space or posterior cul-de-sac
- Postpartum pain scores at 2, 24, and 48 hours were not significantly correlated with free fluid levels at various time points
- Cleaning of the paracolic gutters was not significantly associated with the presence of free fluid detected by FAST scan at any time point

## Tables and Figures

### Postpartum opioid overdose deaths per 100,000 deliveries



### Indication for Cesarean Delivery



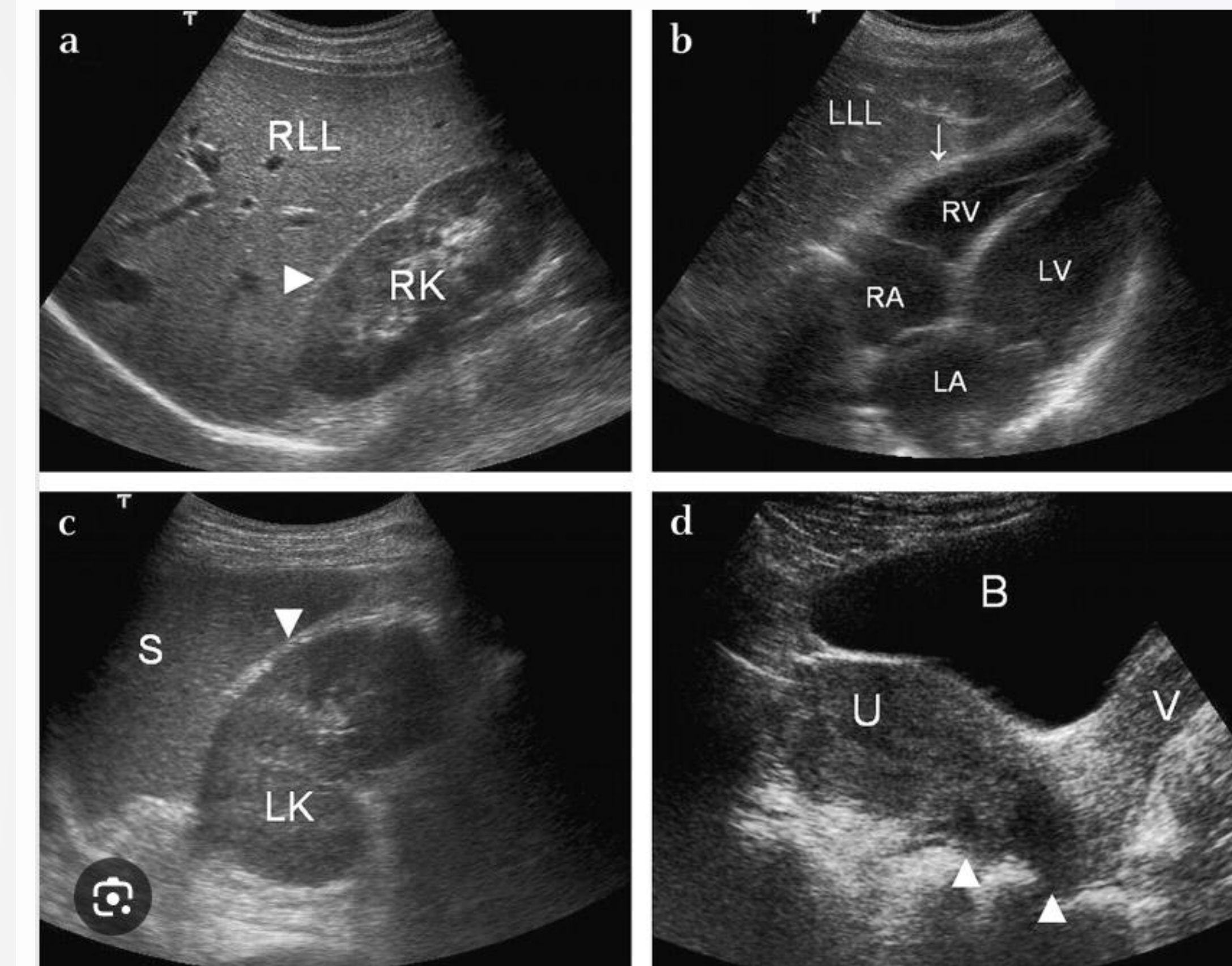
### Primary Outcome: Opioid Use

	Dose of Oxycodone	
	CC	p value
Total FF imm. postop	.171	.319
FF liver imm. postop	.050	.770
FF posterior cul-de-sac imm. postop	.188	.271
Total FF delayed postop	.236	.166
FF liver delayed postop	.125	.469
FF posterior cul-de-sac delayed postop	.231	.175

### Detection of Free Fluid

	Immediate Postop Scan (n=38)	Delayed Postop Scan (n=38)
Posterior cul-de-sac	20 (52.6%)	10 (26.3%)
Hepatorenal space	16 (42.1%)	5 (13.2%)

## The FAST Scan



## Discussion

- In our cohort, intraabdominal free fluid detected by FAST scan after cesarean delivery did not correlate with postpartum opioid use or with postpartum pain scores
- With higher enrollment, there could be a correlation between the abovementioned variables as well as an effect of intraoperative cleaning of the paracolic gutters on presence of postop free fluid

In our limited, single institution cohort, intraabdominal free fluid detected by FAST scan in the postoperative cesarean patient did not correlate with postpartum opioid use or with postpartum pain scores



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